A.4.21 AOC 35

Description

Tank Basin 771 was identified as a new AOC in correspondence from Chevron to the USEPA, dated November 21, 2000. AOC 35 has been added based on an apparent release from a faulty roof drain. Inspection records indicate that in 1979, an apparent release of crude oil occurred into the north side of the tank basin from a faulty roof drain on Tank 771. AOC 35 is rectangular and measures approximately 800 feet in perimeter, encompassing approximately 37,500 square feet. The associated AST, Tank 771 is constructed of welded steel rings with a steel bottom plate. Tank 771 has a diameter of 150 feet, a height of 48 feet, and a capacity of 150,000 Bbls. It was constructed in 1951 and has been in continuous operation since 1951. Refinery records indicate that Tank 771 has been used to store crude oil since its construction.

As summarized on Table A.4.18, nine soil samples were collected from three borings and one monitoring well (MW-148) was installed in the vicinity of AOC 35. The nine soil samples were analyzed for TCL VOCs and SVOCs, and TAL metals. One sample was also analyzed for SPLP metals and physical characteristics.[1]

Soil

Chevron installed three new soil borings (S0818, S0819 and S0820) to characterize soils within AOC 35. The approximate locations of S0819 and S0820, installed within the north side of the tank basin, are shown on Figure A.4.18. The location of S0818 was installed south of AOC 35 with Tank Basin 767 due to physical limitations along the southern boundary of the tank basin.

The following table summarizes the number of samples where delineation criteria were exceeded in soil samples:

Constituents of Concern	Surface Soils (0 to 2 ft)	Fill Material (>2 ft)	Native Soils	Total)
Benzene	0/3	0/3	0/3	0/9
Other VOCs	0/3	0/3	0/3	0/9
Benzo(a)pyrene	0/3	0/3	0/3	0/9
Other SVOCs	0/3	0/3	0/3	0/9
Lead	0/3	0/3	0/3	0/9
Other TAL Metals[a]	1/3	1/3	0/3	2/9

[a]Totals do not include naturally-occurring metal compounds in excess of the delineation criteria (Al, Ca, Fe, Mg, Mn, K and Na).

[1]Physical characteristics specified in Appendix A, Task IV of Module III of the HWSA Permit included saturated and unsaturated permeability tests, moisture content, relative permeability, bulk density, porosity, soil sorptive capacity, CEC, TOC, pH, Eh and grain size distribution.

Surface Soils (0 to 2 feet bgs)

There was no evidence of petroleum related impacts in any of the three borings. The only constituents detected above the applicable soil delineation criteria in surface soil samples were antimony, arsenic and naturally-occurring iron. Antimony (15.5J mg/kg) was detected slightly above the most conservative soil delineation criterion (14 mg/kg) in the surface soil sample from S0820. Arsenic (21.3 mg/kg) was detected slightly above the applicable soil delineation criterion in one surface soil sample (S0819A4), which is well within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003).

Subsurface Fill Materials (>2 feet bgs)

As noted above, there is no evidence of petroleum impacts in any of the borings installed within the AOC 35 tank basin. The fill layer ranges in thickness from approximately six feet to 13 feet. Arsenic (27.7 mg/kg) was the only COC detected above the applicable soil delineation criterion (20 mg/kg). This concentration is well within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003).

Native Material

A clay/peat layer underlies the fill layer at depths ranging from approximately 6 ft to 13 ft bgs. With the exception of naturally-occurring iron, no constituents were detected above the applicable soil delineation criteria in any of the three native soil samples. Therefore, the exceedances of soil criteria are vertically delineated.

Groundwater

Potential groundwater contamination near AOC 35 was investigated as part of the site-wide groundwater monitoring investigation portion of this RFI, and is described in Section 8 of the RFI. It does not appear that any impacts to groundwater exist in the immediate vicinity of AOC 35 due to historical operations or contaminant release in Tank Basin 771.

Summary

Although antimony (15.5J mg/kg) and arsenic (21.3 mg/kg and 23.7 mg/kg) have been detected above the applicable soil delineation criteria, these detections are relatively minor, and arsenic concentrations (21.3 mg/kg and 23.7) are well within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003). Furthermore, there have been little, if any impacts to groundwater in the vicinity of AOC 35. Therefore, no further action is recommended for this AOC.